

Customer No.: 31561
Application No.: 10/064,882
Docket NO.: 7857-US-PA

REMARKS**Present Status of the Application**

Claims 1-11 remain pending of which claims 1-11 have been canceled and new claims 12-15 have been added to more explicitly and more precisely describe the claimed invention. Further, Fig. 1, and specification has been amended. It is believed that no new matter adds by way of these amendments to claims, drawings, specification or otherwise to the application. For at least the following reasons, Applicants respectfully submit that claims 12-15 are in proper condition for allowance. Reconsideration is respectfully requested.

Customer No.: 31561
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Response to Objections to Drawing under 37 CFR 1.84

1. The Office Action objected to the drawings for failing to comply with 37 CFR 1.84 because reference character 140 has been used to designate both a drain region and a channel region. The drawing is further objected to for the reference "112" mentioned in the description is not included in the drawings.

In response thereto, Applicants have proposed to amend the drawings as a separate accompanying pages. After entry of the proposed amendments to drawings, it is believed that the above objections can be overcome. Reconsideration is respectfully requested.

Further, with regard to reference "112", the Examiner's attention is kindly directed to Figs. 1-3, where the reference "112" is shown to represent "a source region". Accordingly the above objection is moot. Reconsideration is respectfully requested.

2. The Office Action objected to the drawings for failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 112' in Fig. 1.

In response thereto, Applicants have amended the specification. After entry of the above amendments to specification, it is believed that the above objection can be overcome. Reconsideration is respectfully requested.

Response to Rejections under 35 U. S. C. 102

3. The Office Action rejected claims 1-11 under 35 U.S.C. 102(e) as being anticipated by Takashino et al. (US-2003/0011007, hereinafter Takashino).

Applicants respectfully disagree and traverse the above rejections as set forth below. It is well established that rejections under section 35 U.S.C. 102 requires that each and every element of a claim must be disclosed exactly by a single prior art

Customer No.: 31561
Application No.: 10/064,882
Docket NO.: 7857-US-PA

reference. Newly added independent claim 12 is allowable for at least the reason that Takashino substantially failed to teach, suggest or disclose every features of the claimed invention. More specifically, Takashino substantially failed to teach, suggest or disclose an NROM memory cell comprising: "one gate structure formed on the substrate between one source region and one drain region, the gate structure including an oxide-nitride-oxide layer and a control gate layer sequentially stacked on the substrate, wherein said gate structure has a waist portion wider than two ends thereof respectively adjacent to the source region and the drain region such that a source-side electron injection is minimized when a programming action is proceeded, as required by the newly added claim 12."

The advantage of the gate structure having the above profile is that in a program coding operation, a portion of the gate structure (164) close to the source region (162) may serve as an equivalent source region. Since the equivalent source region has a size much greater than the drain region, the second bit effect is reduced considerably.

Instead, substantially Takashino (please see for example figures 1, 2, 3, 4, 5 and 17) teaches forming a plurality of source/drain regions (50) surrounding the gate structure (40), for doing so, isolation layer (60) as taught by Takashino is required. Accordingly Takashino cannot anticipate every features of claim 12 in this regard.

Further, Takano substantially fails to suggest, teach or disclose the advantages of the shape of the gate structure for a memory cell for overcoming the problems due to illumination by radiation. Instead, Takashino substantially teaches a plurality of source/drain regions (50) surrounding the gate structure (40), with a view of increasing the density of the memory cell and not more. Accordingly, Applicants respectfully

Customer No.: 31561
Application No.: 10/064,882
Docket NO.: 7857-US-PA

submit that Takashino cannot possibly render every features of claim 12 obvious in this regard.

For at least the foregoing reasons, claims 12-15 patently define over prior art of record. Reconsideration and withdrawal of these rejections is respectfully requested.

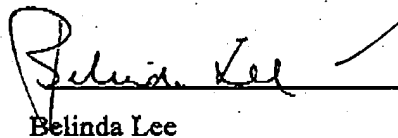
CONCLUSION

For at least the foregoing reasons, it is believed that all pending claims 12-15 are in proper condition for allowance. If the Examiner believes that a conference would be of value in expediting the prosecution of this application, he is cordially invited to telephone the undersigned counsel to arrange for such a conference.

Respectfully submitted

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Customer No.: 31561
Application No.: 10/064,882
Docket NO.: 7857-US-PA

AMENDMENTS TO DRAWING FIGURES:

Please Amend the Drawing Figure 1 as shown in red ink and as presented in the
replacement figure 1.

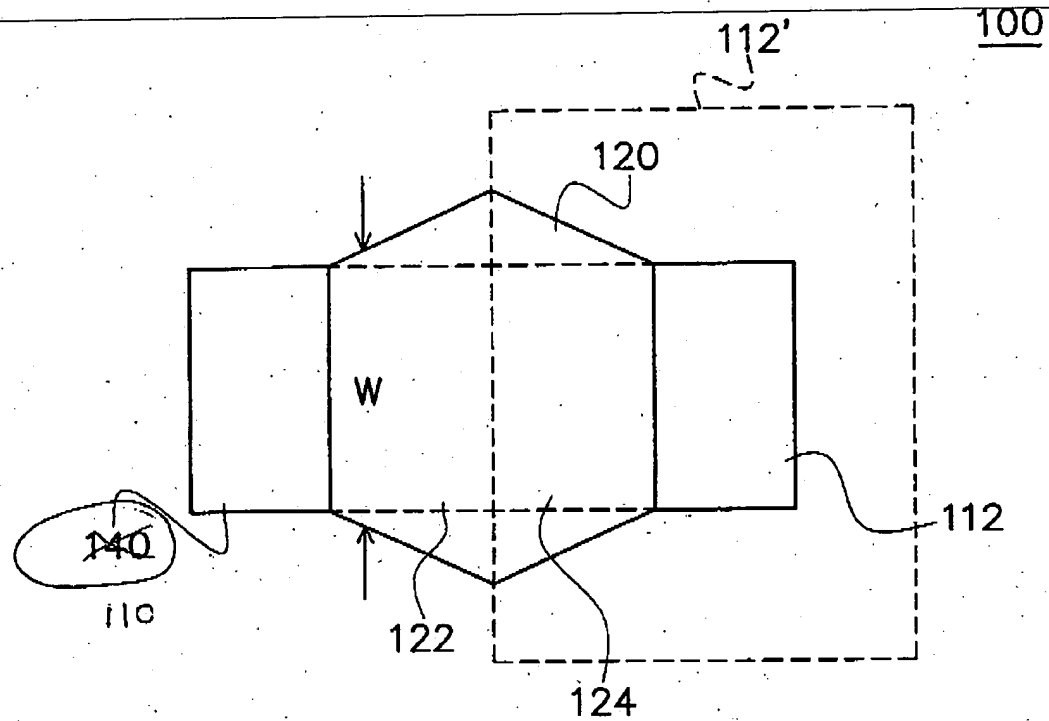


FIG. 1

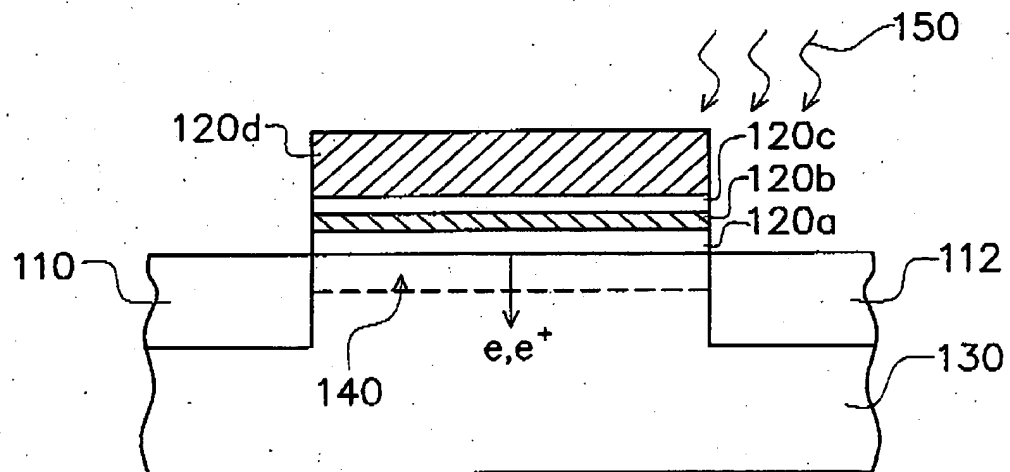


FIG. 2